



Application Testing Solutions

Rick Brown, Tricentis Account Manager
r.brown@tricentis.com
416-407-6975



Agenda

- SAP and Tricentis SOLEX Relationship
- Delivering Quality at Speed
- Benefits of Business Assurance Transformation
- Available Resources



Why **SAP** Chose **Tricentis** as Its **Official** Testing Solution

Tricentis-SAP Partnership Value

Partnership OEM | Product Reselling | Co-Development | Premium Support

The Global Leader in Enterprise Testing Solutions

- Leader in Gartner Magic Quadrant
- Proven Results in the World's Biggest Brands
- Versatile Platform for Customers at Any Stage of SAP Modernization

Enterprise-Grade Platform for SAP Testing and Beyond

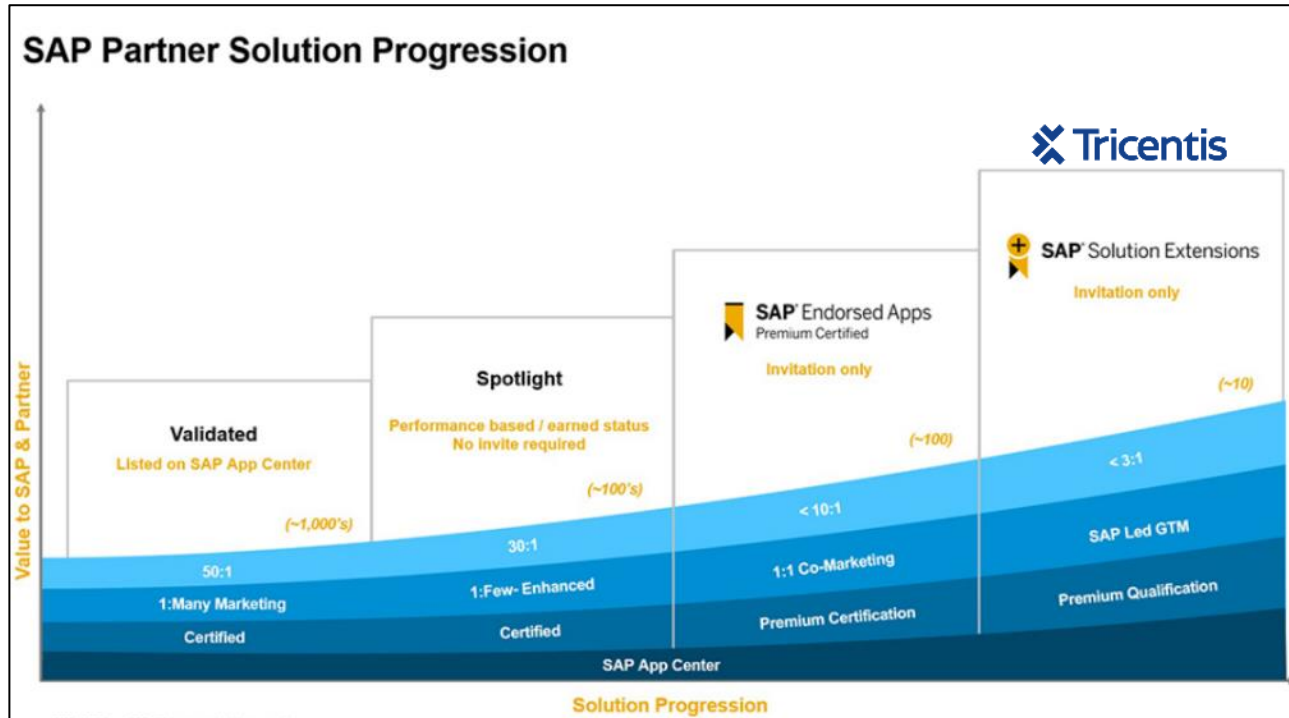
- Model-Based Automation for Resiliency and Scalability
- Risk-Based Approach That Minimizes Business Downtime
- Seamless Integrations for SAP and Non-SAP Testing

Modern, AI-Driven Technology for Easy Adoption

- AI-driven Impact Analysis for Fast, Safe Changes
- Cloud-Based Architecture
- No-Code, Business Friendly Platform for Easy Adoption

Tricentis is an SAP Solution Extension (SOLEX) Partner

Highest level of Partnership within SAP



SAP Solution Extensions

- **Highest level** of SAP software partnership
- **SAP Premium Qualification (PQ)** ensures that product quality is same as SAP products
- **Long-term** roadmap planning and joint development
- **Only ~10 partners** "actively" managed in the SOLEX program – **SAP will focus on Top 3 only**

Critical Customer Value | Long-Term Outlook
Joint Roadmap Planning

SAP's Fastest Growing SolEx Partner... EVER!

verizon✓


Cascades

USDA

LOCKHEED MARTIN 

 **Loves**



IBM

ULTA
BEAUTY

Ortho
Clinical Diagnostics

lyondellbasell



CP Rail

CIBC 



 Graphic
Packaging
INTERNATIONAL

stryker®



 Stericycle®

AMD 

Mondelēz
International

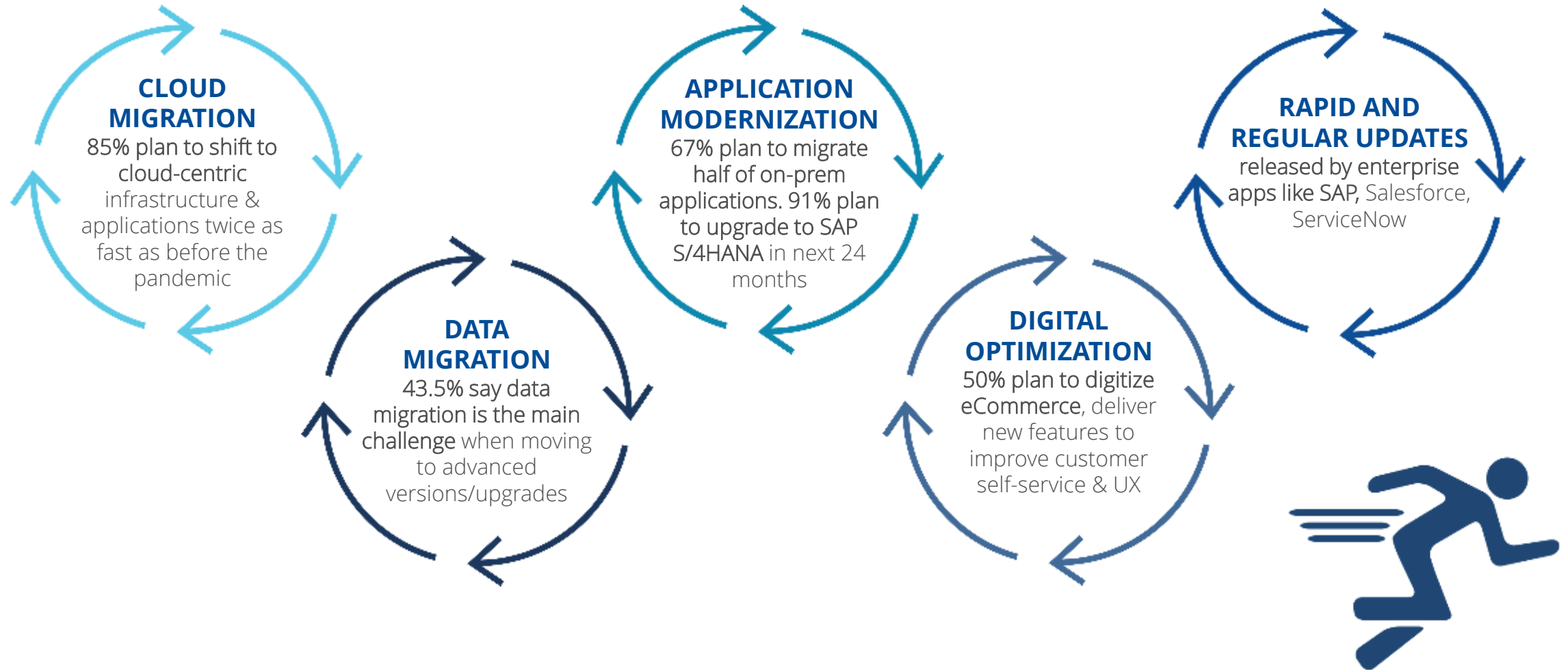


 ENERGY TRANSFER

QORVO™

ConocoPhillips 

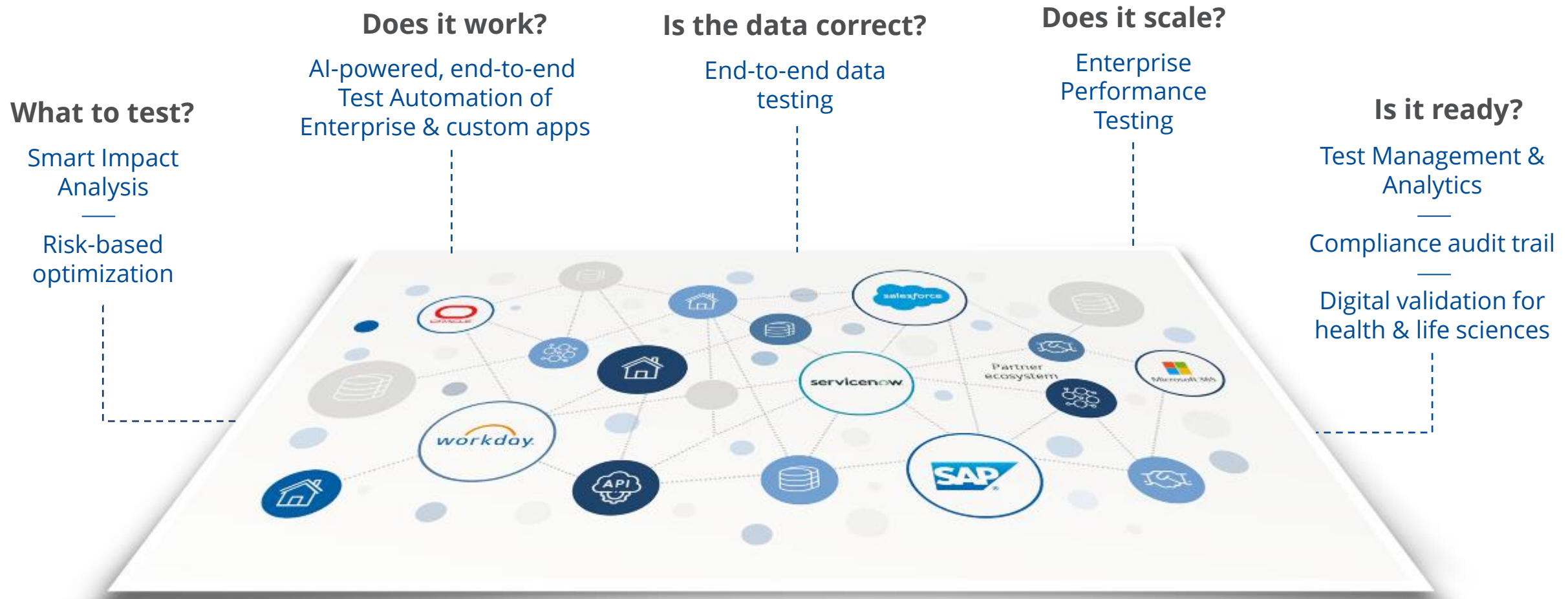
Digital Business Initiatives



*Sources: Mayfield CXO Survey – Post COVID-19 Impacts to IT, IDC FutureScape IT Industry 2021 Predictions, ASUG Tricentis Survey 2021 – Future of SAP Delivery

Deliver High-Quality Applications at Speed

All the Capabilities You Need



Deliver High-Quality Applications at Speed

All the Capabilities You Need

What to test?

Smart Impact
Analysis

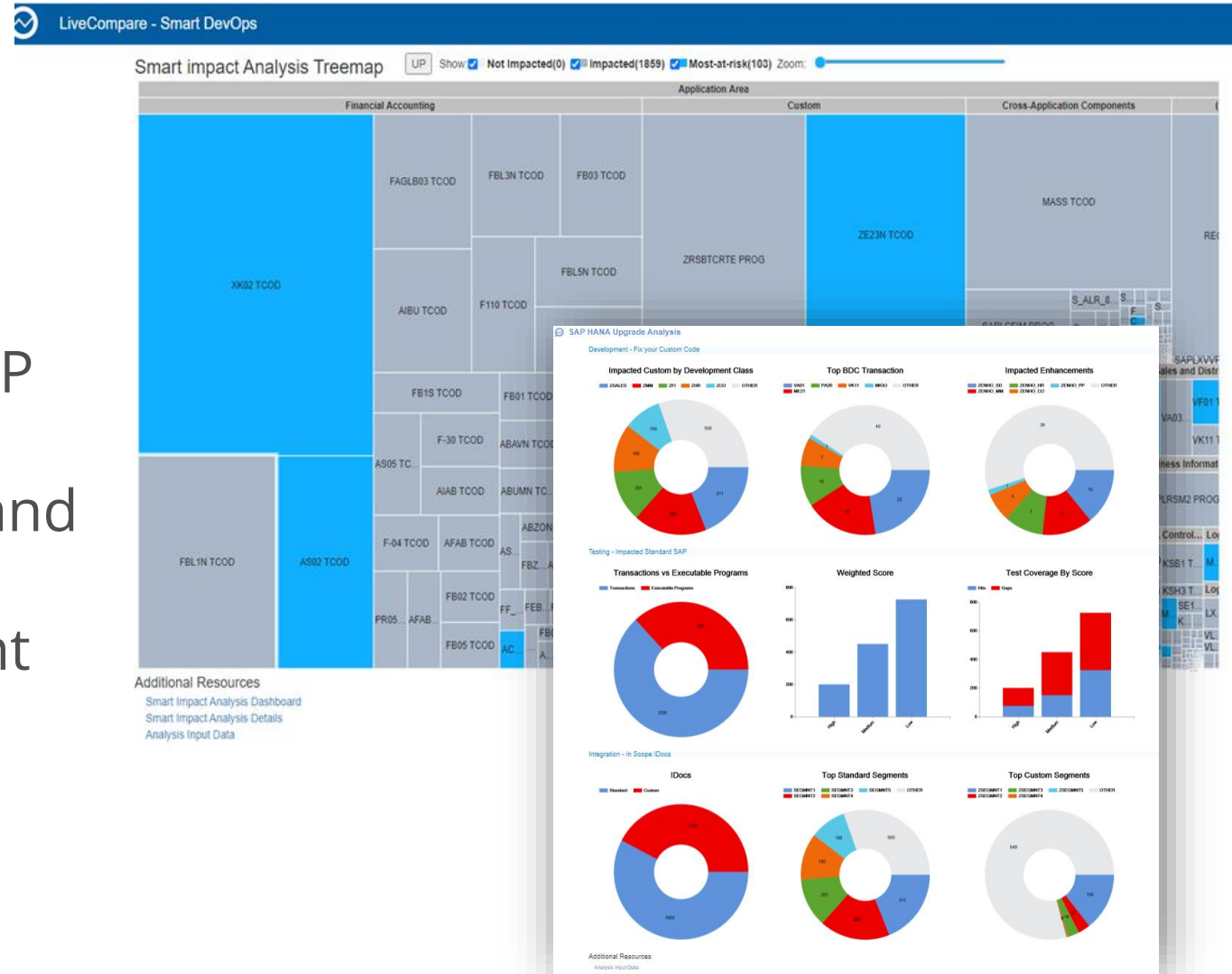
Risk-based
optimization



SAP Change Impact Analysis (CIA)

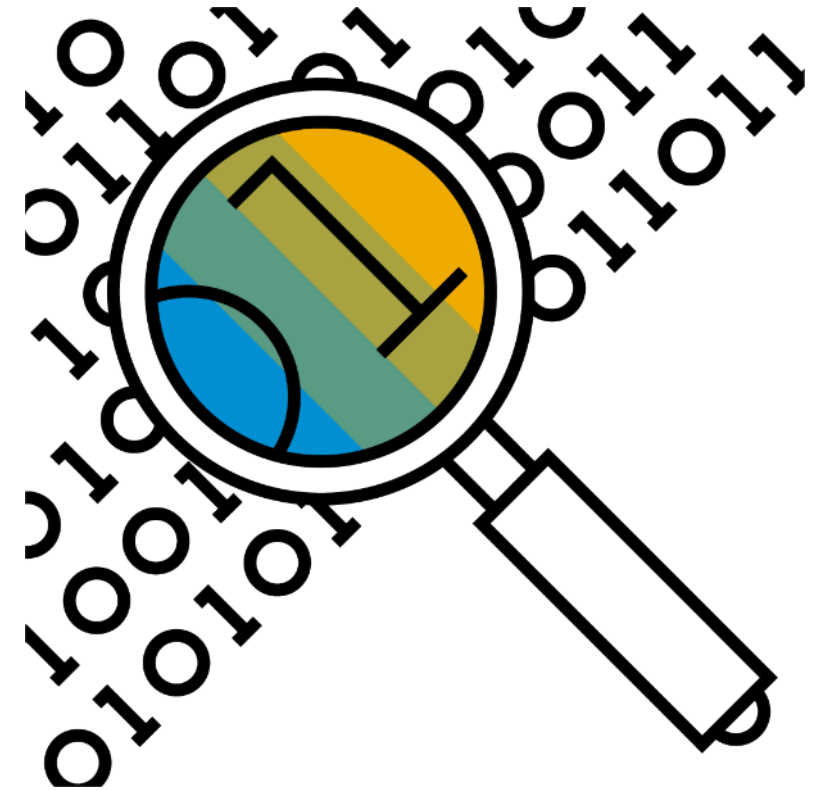
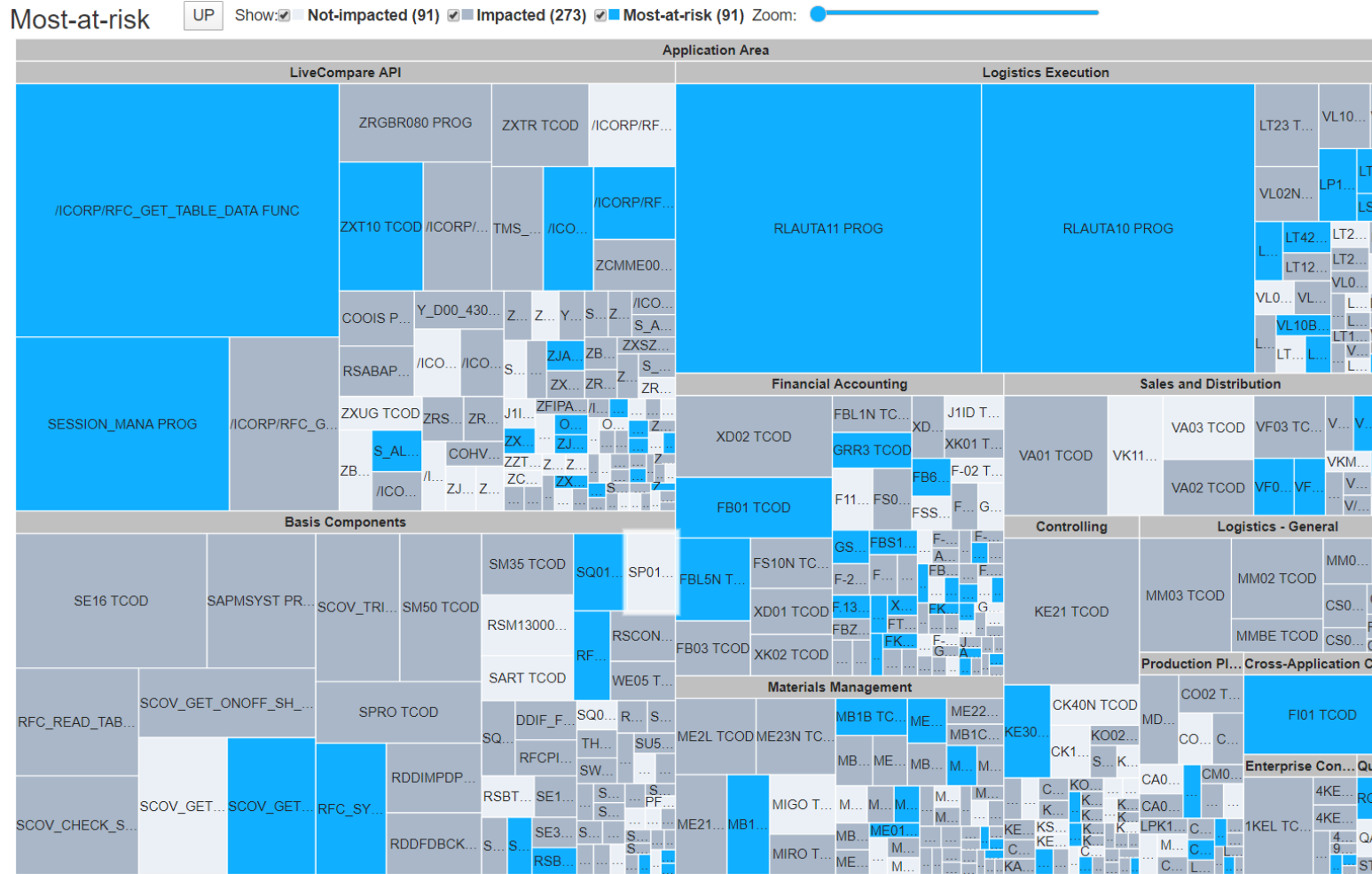
SAP Change Intelligence that lets your teams deploy with confidence:

- **Automated** analysis of your SAP landscapes
- **AI-powered** risk identification and test optimization
- **Actionable** insights that prevent production defects



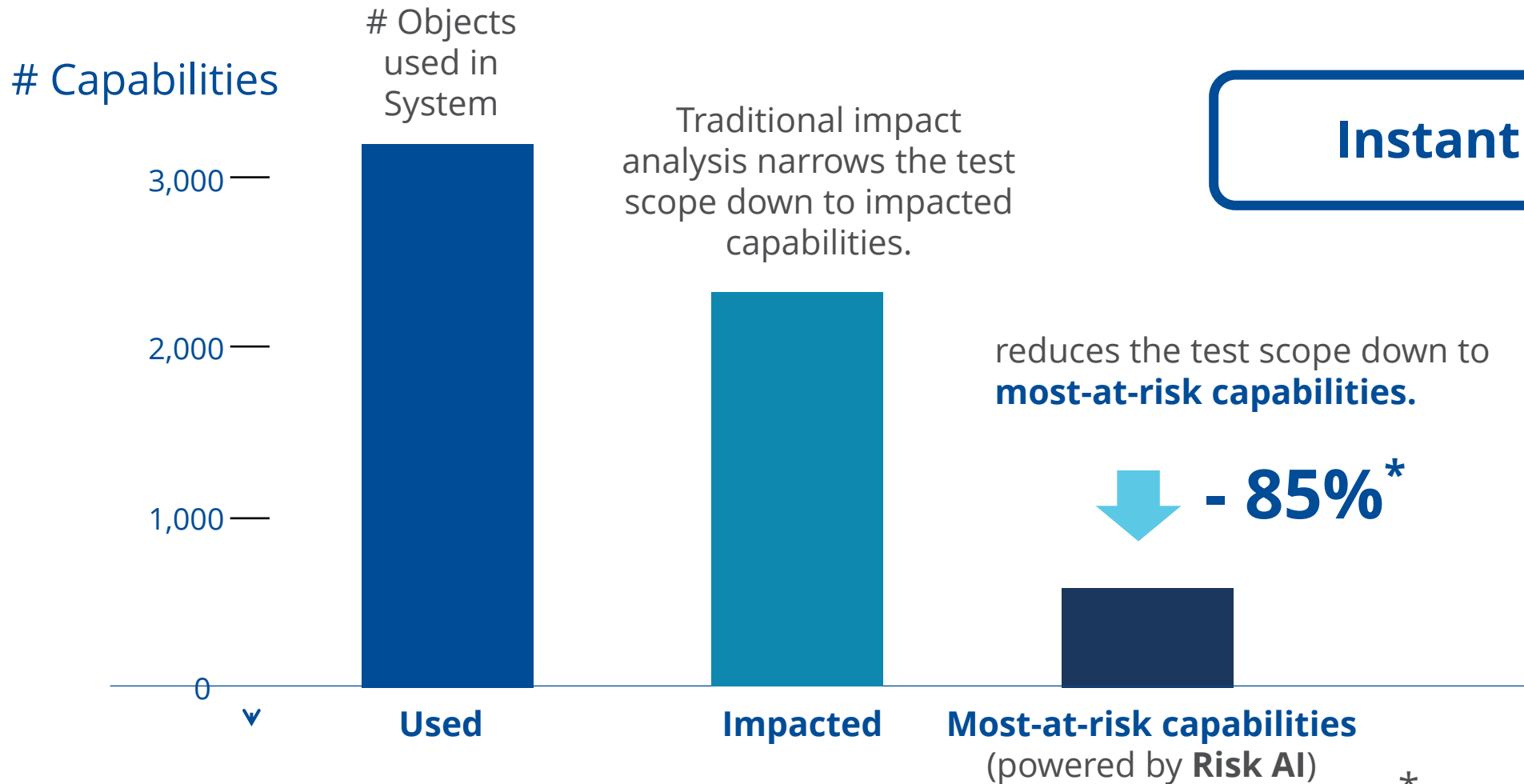
Most-at-Risk Capabilities

Visualize Your Focus for Testing!



Change Impact Analysis is the **bird's eye view** identifying application areas that are **most-at-risk** from an update

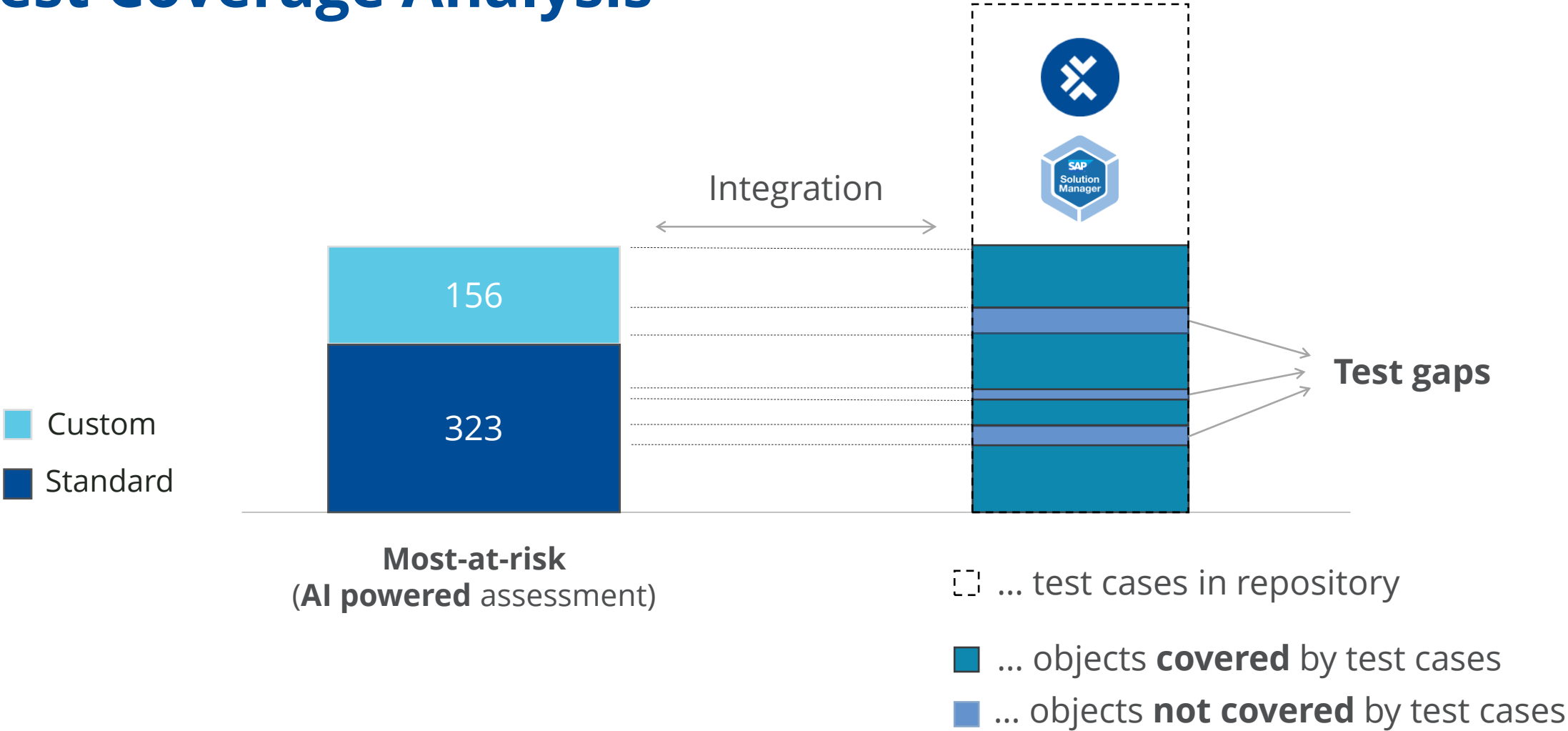
Test Scope Reduction



Instant ROI

* Findings from Tricentis customer research

Test Coverage Analysis



Deliver High-Quality Applications at Speed

All the Capabilities You Need

What to test?

Smart Impact
Analysis

Risk-based
optimization

Does it work?

AI-powered, end-to-end
Test Automation of
Enterprise & custom apps

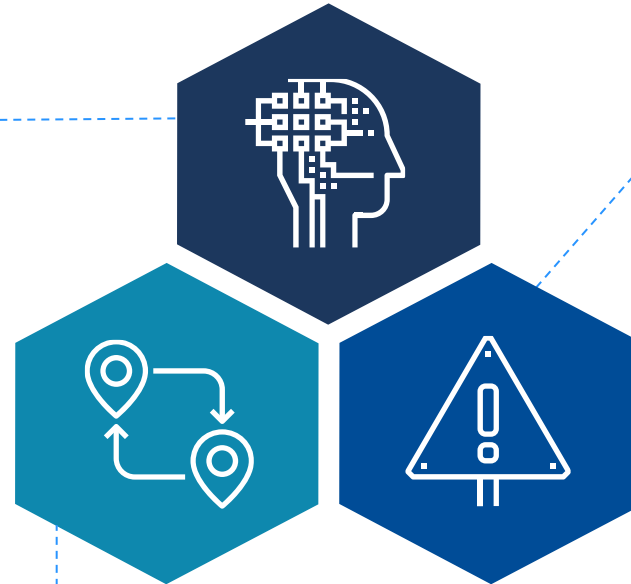


SAP Enterprise Continuous Testing (ECT)

Optimizes and accelerates end-to-end testing of your entire digital landscape

NO CODE / AI-POWERED

Build resilient, reusable and future-proof test automation without having to maintain tests as applications evolve



RISK OPTIMIZATION

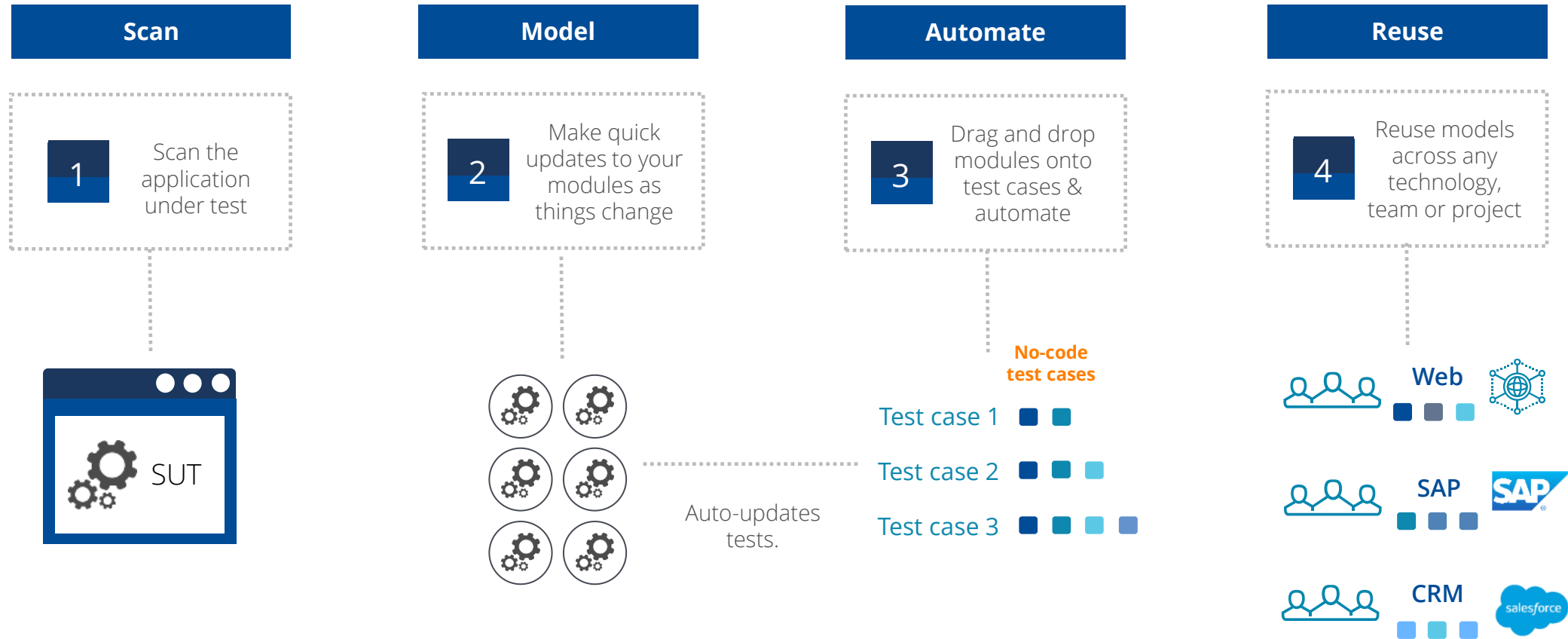
Reduce the risk in your software releases while prioritizing testing for business-critical functionality – with much fewer tests

END-TO-END COVERAGE

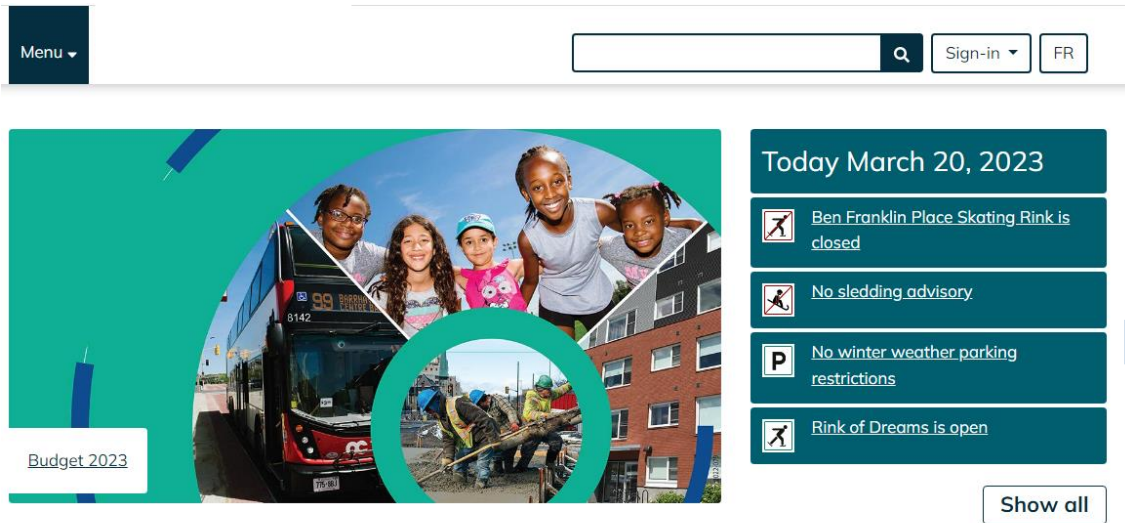
Execute tests at the UI, API and data layer – Tosca supports 170+ technologies and enterprise applications

Model-Based Test Automation – How It Works

Create and maintain no-code, reusable test assets at scale



Example: Webpage



Parking, roads, and travel

pay your ticket, road and sidewalk maintenance, parking permits...

Recreation and culture

registration and drop-in activities, swimming, skating, culture, fitness, sport...

Garbage and recycling

collection calendar, waste explorer, get a

Planning, development and construction

Jobs with the City

search for jobs, create and update profile...

City Hall

mayor and councillors, budget, public

Module


City	Nav Links	
Link	Parking, roads, and t...	
Link	Recreation and cultu...	
Link	Garbage and recycling	
Link	Planning, developm...	
Link	City Hall	
Link	Jobs with the City	
Search Jobs		
al	Search current oppo...	
OK	Search Button	

Test Case

- TC 1 Smoke -Custom
 - Launch website
 - Navigate to website
 - Maximize Window
 - Wait 1 Second
 - Take Screenshot
 - Process
 - City Nav Links
 - Search Jobs
 - Post Condition
 - Wait 2 seconds
 - Close Browser

Results and Reporting - Smoke Test

Results

1 Custom TC			1		
TC 1 Smoke -Custom					
20.03.23 15:50:06	Executing on 'Chrome', Br...	20.03.23 15:5...	00:31.485		
Navigate to w...		20.03.23 15:5...	00:00.049		
Maximize Win...		20.03.23 15:5...	00:04.238		
Wait 1 Second	Waited for >5000< millise...	20.03.23 15:5...	00:05.009		
Take Screenshot	The screenshot was succ...	20.03.23 15:5...	00:00.065		
City of Ottawa ...		20.03.23 15:5...	00:15.582		
Search Jobs		20.03.23 15:5...	00:04.484		
Wait 2 seconds	Waited for >2000< millise...	20.03.23 15:5...	00:02.004		
Close Browser		20.03.23 15:5...	00:00.003		

PDF Report

Smoke Test

✓ TC 1 Smoke -Custom **PASSED**

Started: 3/20/2023 3:50:06 PM Executed by Admin
 Ended: 3/20/2023 3:50:37 PM

Name	Value	Action	Loginfo
✓ Navigate to website			
✓ Maximize Window			
✓ Operation	Maximize	Input	Operation 'Maximize' has been performed successfully on window with caption 'City of Ottawa'.
✓ Wait 1 Second			Waited for >5000< milliseconds.
✓ Take Screenshot			The screenshot was successfully created.
✓ City of Ottawa Nav Links			
✓ Parking, roads, and travel	{MOUSEOVER}	Input	
✓ Recreation and culture	{MOUSEOVER}	Input	
✓ Garbage and recycling	{MOUSEOVER}	Input	
✓ Planning, development and construction	{MOUSEOVER}	Input	
✓ City Hall	{MOUSEOVER}	Input	
✓ Jobs with the City	{Click}	Input	
✓ Search Jobs			
✓ Search current opportunities:	Testing	Input	
✓ Search Button	{Click}	Input	
✓ Wait 2 seconds			Waited for >2000< milliseconds.
✓ Close Browser			
✓ Operation	Close	Input	Operation 'Close' has been performed successfully on window with caption "City".

Create Sales Order: VA01 Initial Screen

Order Type: ZOR

Organizational Data

Sales Organization: AU01

Distribution Channel: 02

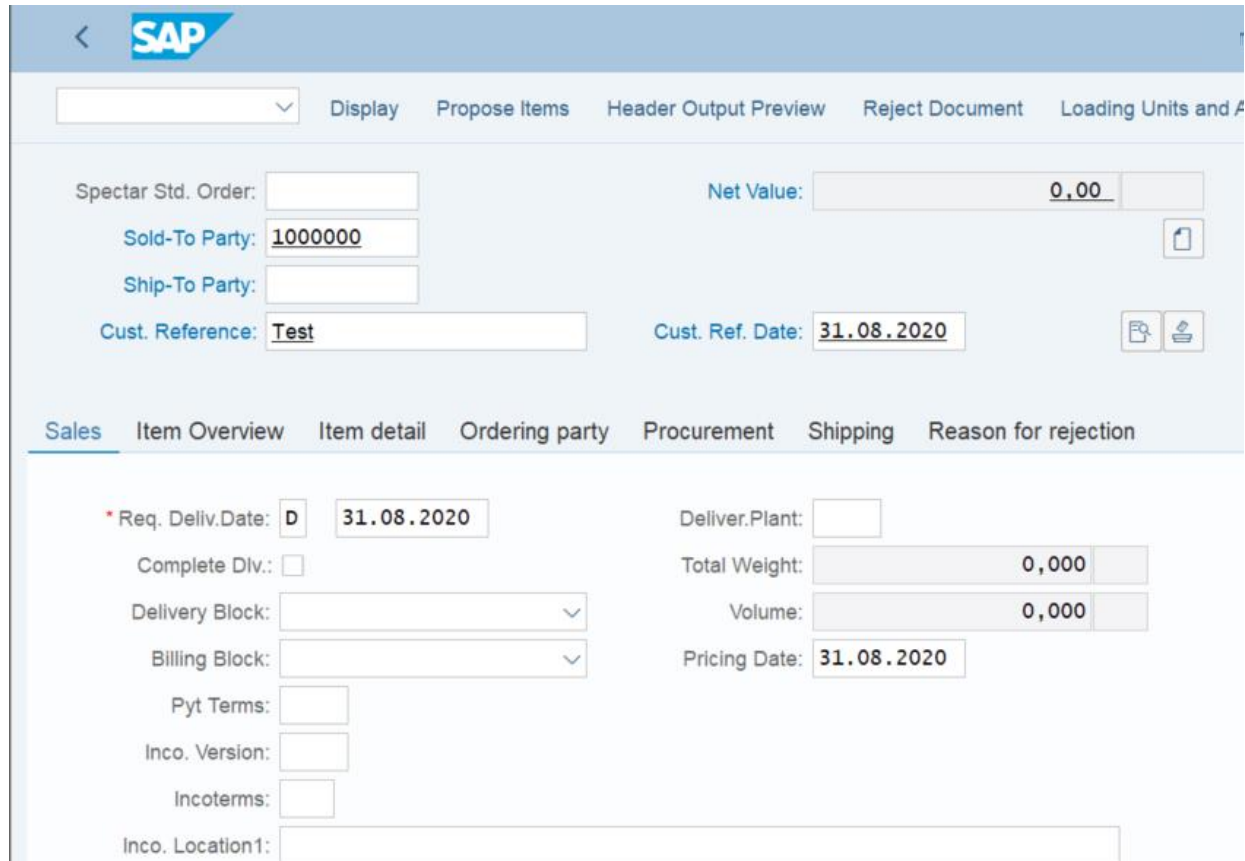
Division: 01

Sales Office: AU01

Sales Group: A01

Create Sales Order: Initial Screen	
Order Type	GAOR; KB; OR; ZOR
Sales Organization	3010; AU01; GABC; TRC
Distribution Channel	01; 02
Division	AU01
Sales Office	AU01; AU02
Sales Group	AU01

Create Sales Order: VA01 Overview



SAP

Display Propose Items Header Output Preview Reject Document Loading Units and A

Spectar Std. Order: Net Value:

Sold-To Party:

Ship-To Party:

Cust. Reference: Cust. Ref. Date:

Sales Item Overview Item detail Ordering party Procurement Shipping Reason for rejection

* Req. Deliv. Date: Deliver. Plant:

Complete Div.: Total Weight:

Delivery Block:

Billing Block:

Pyt Terms:

Inco. Version:

Incoterms:

Inco. Location1:

Volume: Pricing Date:

Name	ValueRange
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Order Type Sales Organization Distribution Channel Division Sales Office Sales Group 	<ul style="list-style-type: none"> GAOR; KB; OR; ZOR 3010; AU01; GABC; TRC 01; 02 AU01 AU01; AU02 AU01
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Standard Order Net value Currency PO Number PO date Display doc. header details Sold-To Party Create Sold-To Party Ship-To Party 	<ul style="list-style-type: none"> {Click};{Doubleclick};{Rightclick} {Click};{Doubleclick};{Rightclick} {Click};{Doubleclick};{Rightclick} {Click};{Doubleclick};{Rightclick} {Click};{Doubleclick};{Rightclick} {Click} {Click};{Doubleclick};{Rightclick} {Click} {Click};{Doubleclick};{Rightclick}

Create Sales Order: Overview (Enter Material/Quantity)

SAP

Display Propose Items Header Output Preview Reject Document Loading Units and A

Spectar Std. Order: Net Value:

Sold-To Party:

Ship-To Party:

Cust. Reference: Cust. Ref. Date:

Sales Item Overview Item detail Ordering party Procurement Shipping Reason for rejection

* Req. Deliv.Date: Deliver.Plant:

Complete Div.: Total Weight:

Delivery Block: Volume:

Billing Block: Pricing Date:

Pyt Terms:

Inco. Version:

Incoterms:

Inco. Location1:

All Items

Item	Material	Req. Segment	Order Quantity	First Date	Un	S	Item Description
<input type="checkbox"/>	1000000000			2 31.08.2020		<input type="checkbox"/>	
<input type="checkbox"/>				31.08.2020		<input type="checkbox"/>	

Details	
Name	ValueRange
Create Sales Order: Initial Screen	
Order Type	GAOR; KB; OR; ZOR
Sales Organization	3010; AU01; GABC; TRC
Distribution Channel	01; 02
Division	AU01
Sales Office	AU01; AU02
Sales Group	AU01
Order - Header	
Standard Order	{Click};{Doubleclick};{Rightclick}
Net value	{Click};{Doubleclick};{Rightclick}
Currency	{Click};{Doubleclick};{Rightclick}
PO Number	{Click};{Doubleclick};{Rightclick}
PO date	{Click};{Doubleclick};{Rightclick}
Display doc. header details	{Click}
Sold-To Party	{Click};{Doubleclick};{Rightclick}
Create Sold-To Party	{Click}
Ship-To Party	{Click};{Doubleclick};{Rightclick}
Order - Item Overview Tab	
All items	
<Row>	
<Col>	

Building Automation for Enterprise Continuous Testing

Name	Value	ActionMode	DataType
Create Sales Order			
Start Transaction			
Business Process			
Initial Screen			
Create Sales Order: Initial Screen			
Order Type	ZOR	Input	String
Sales Organization	AU01	Input	String
Distribution Channel	02	Input	String
Division	01	Input	String
Sales Office	AU01	Input	String
Sales Group	A01	Input	String
Click Enter			
Enter Header data			
PO Number	Test	Input	String
PO date	<input type="text" value="DATE"/>	Input	String
Sold-To Party	1000000	Input	String
Click Enter			
Material Data			
Enter Material			
All items		Select	String
\$1		Select	String
Material	1000000000	Input	String
Enter Quantity			

- Standard modules
 - TBox XEngines
 - SAP
 - SAP Logon
 - SAP Login
 - SAP SubToolBar
 - SAP Statusbar
 - SAP Toolbar
 - SAP Toolbar
 - License Information for Multiple Logon
 - TBox Automation Tools
 - Html
 - SAP WinGui
 - SALES & DISTRIBUTION
 - Sales
 - VA11 - Create Inquiry
 - VA21 - Create Quotation
 - VA01 - Create Sales Order
 - Order - Item Overview Tab
 - Create Sales Order: Initial Screen
 - Order Type
 - Sales Organization
 - Distribution Channel
 - Division
 - Sales Office
 - Sales Group

Deliver High-Quality Applications at Speed

All the Capabilities You Need

What to test?

Smart Impact Analysis

Risk-based optimization

Does it work?

AI-powered, end-to-end Test Automation of Enterprise & custom apps

Is the data correct?

End-to-end data testing



SAP Enterprise Data Integrity Testing

Is the data correct?

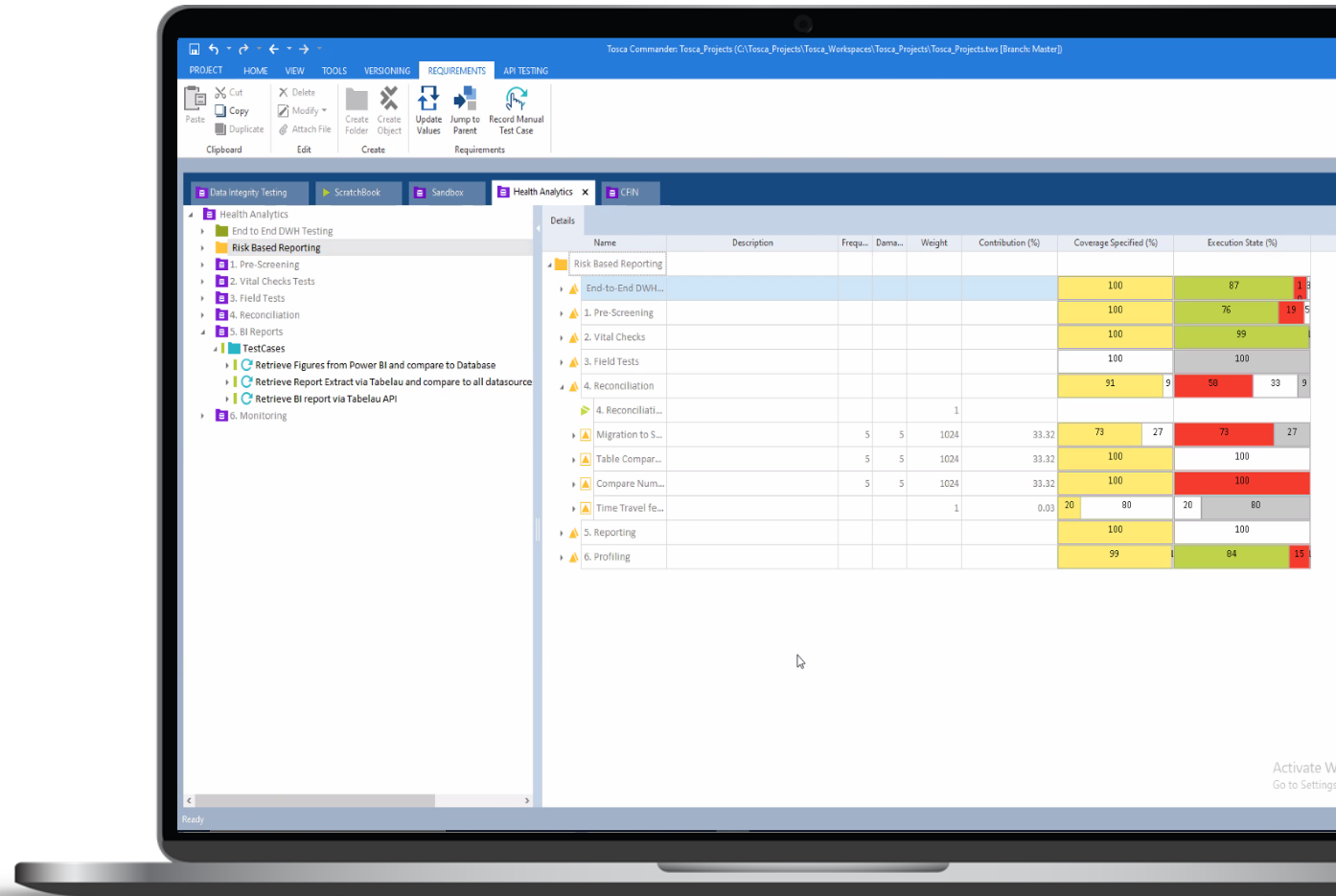
Capabilities:

- Comprehensive data testing across SAP and 3rd-party technologies
- Low-code/no-code automation
- Actionable reporting
- Integration with DataOps and DevOps tools

The screenshot displays the SAP Enterprise Data Integrity Testing interface. The background dashboard shows an 'Outstanding Billing Overview' for 'Trial_01' with 2K items. It includes a donut chart for 'Outstanding Items by Status' (11% and 1%) and a 'Contracts Blocked for Billing' section with 2 contracts. Overlaid on this is the 'Field Tests: Database to Database Wizard' dialog box. The wizard is in the 'Target Database' step, showing a table list for 'SAP_BWDEMO_A4H' with columns for Schema, Table Name, and # Fields. The table list includes various tables like 'system local bw bw2hana/ADSO_SAL2' and 'system local bw bw2hana/ADSO_SAL2/REGTSMhier/REGTSM'. The wizard also has sections for 'Choose input source' (Use ODBC Connection or Upload DDL File), 'Table Filters', and 'Parser Messages (0)'. Navigation buttons 'Cancel', 'Back', and 'Next' are visible at the bottom.

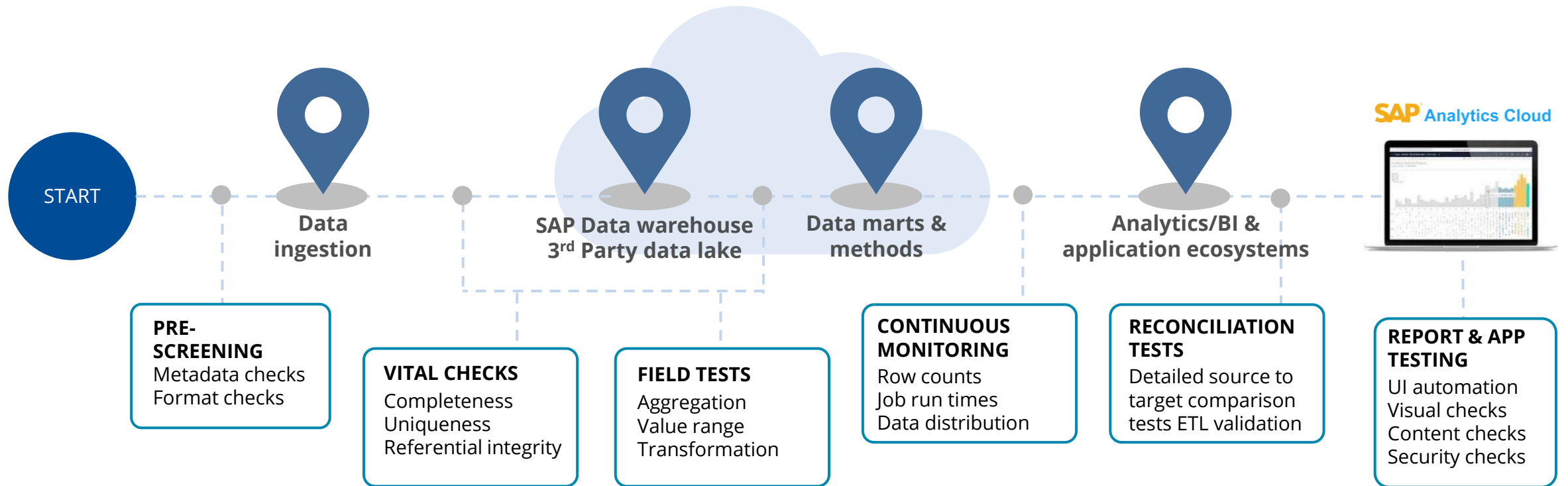
Comprehensive data testing across SAP and 3rd-party technologies

- Tests all data regardless of type, source, or format
- Includes specific data tests tailored to catch errors at different parts of the data journey, from source ingestion to business process step and final report
- Complements existing data tools by filling in the gaps that they don't cover
- Tests at volume and velocity



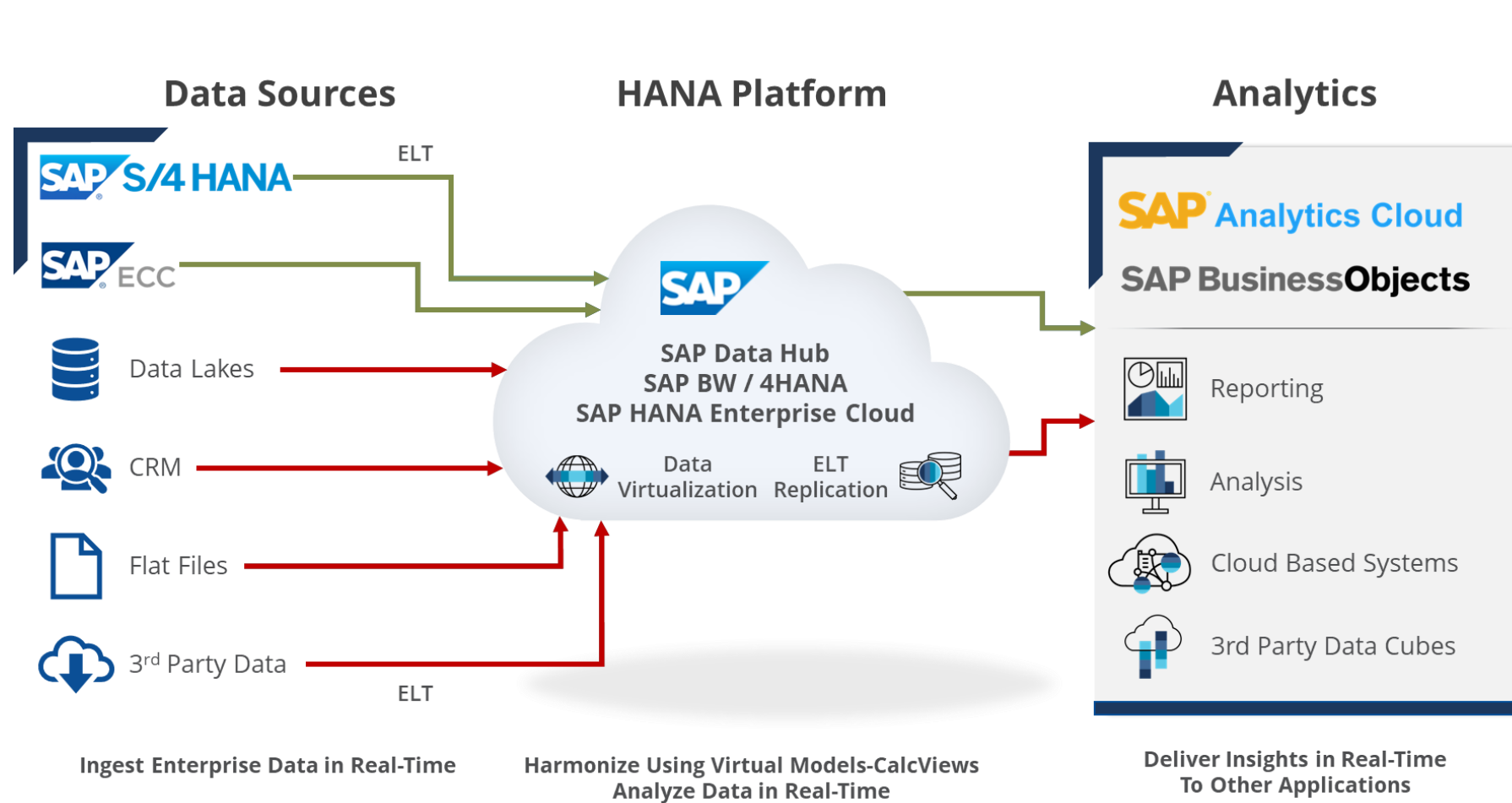
Deliver Trustworthy Data

Example scenario: Verify sales analytics data and dashboards



The Race is on to Find Data Errors

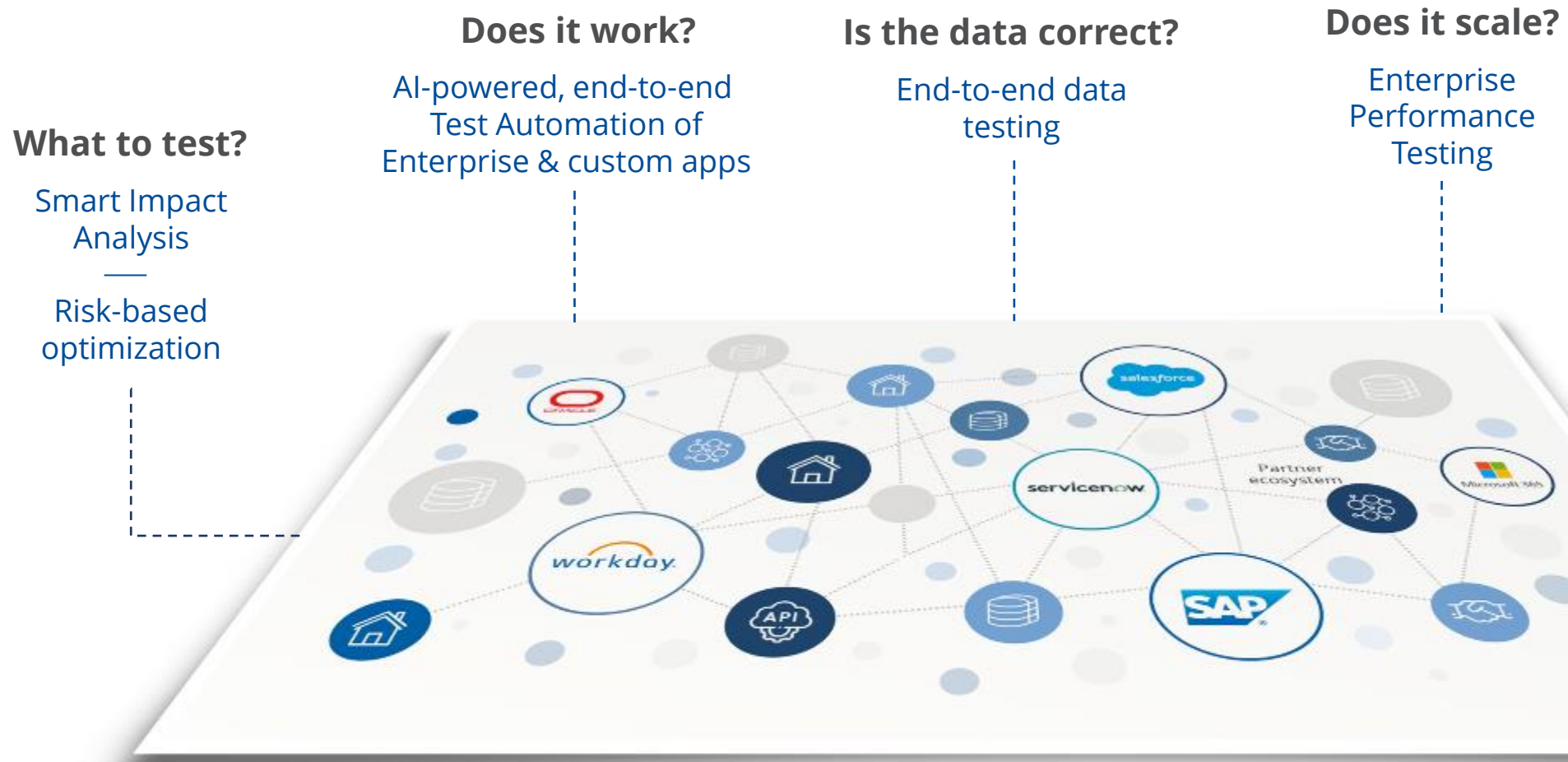
To **TRUST** data in production...you **MUST test end-to-end** in the test environment



- 1 Pre-Screening**
 - Metadata checks
 - Format Checks
- 2 Vital Field Checks & Field Tests**
 - Completeness: Row count, min/max, avg, sum, checks
 - Correctness: Uniqueness, not null, hash-comparisons, data ranges
 - Integrity: Relation, domain
- 3 Reconciliation**
 - Row by row comparison
 - Comparison of 2 data sets
- 4 Report Testing**
 - UI Automation
 - Visual checks
 - Content check for dimensions
 - Security
- 5 Monitoring**
 - Track row counts
 - Job run times
 - Data distribution per column over time

Tricentis Offers - All the Capabilities You Need

Deliver high-quality applications faster and with lower risk



SAP Enterprise Performance Testing (EPT)

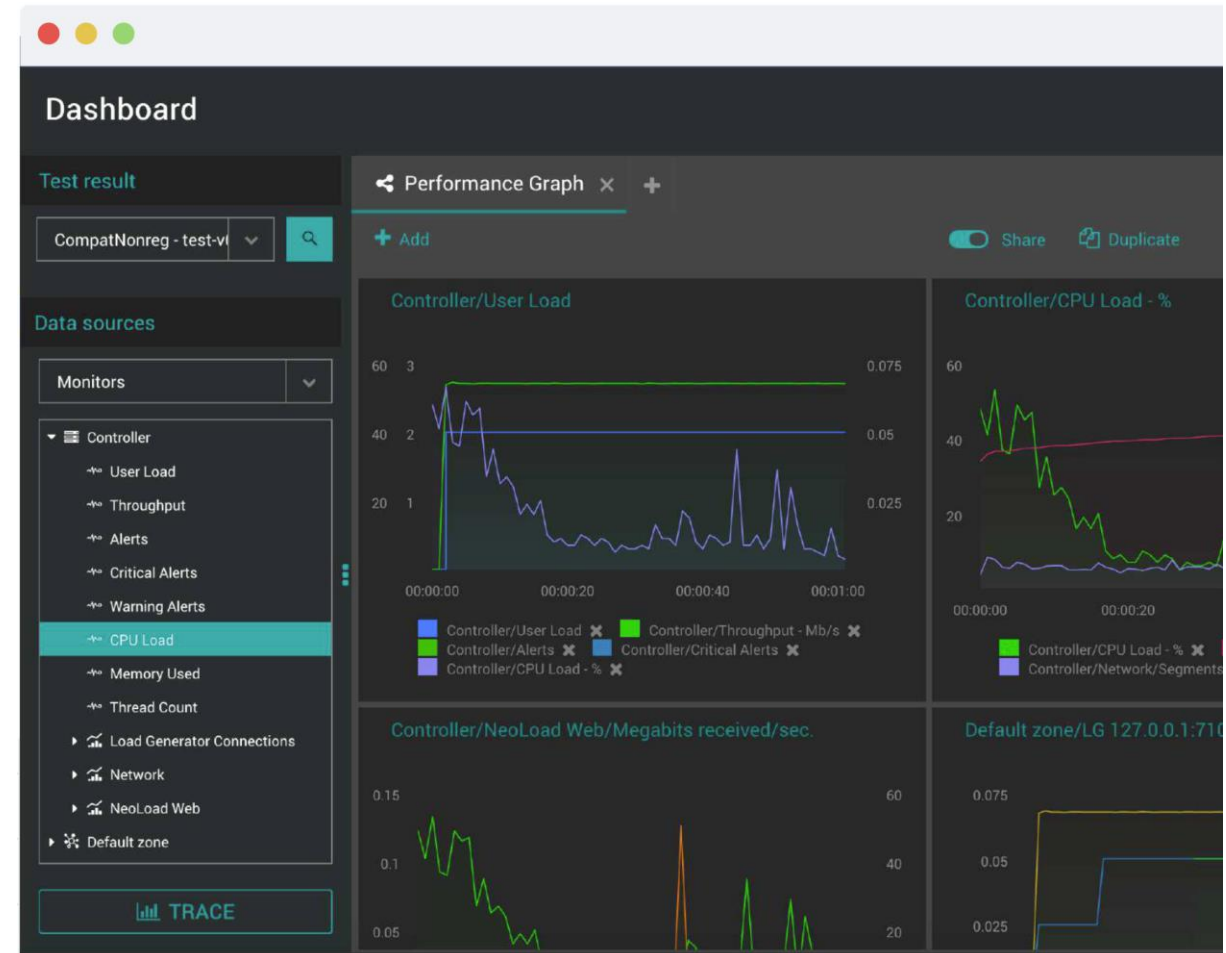
Continuous performance testing for microservice to monolith

Robust Platform uniquely positioned to address performance testing challenges in modern applications (*cloud, web, mobile, streaming, IoT*) and in core enterprise applications such as SAP

Rapid test design with low-code, no-code approaches

For experts and non-experts alike

Continuous performance testing **for all SAP use cases** from S/4HANA migrations to end-to-end SAP business processes and other non-SAP protocol testing



SAP EPT has Native Support for SAP Testing

EPT supports traditional on-premise SAP, hybrid and modern SAP cloud deployments.

User Experience	Web, NetWeaver, FIORI, SAP GUI
Application	ERP (ECC, S/4), CRM, Hybris, Business Technology Platform (BTP)
Platform	SAP NetWeaver, SAP Cloud Platform
Database	Oracle, HANA, SQL, DB2
Non-SAP Protocols	HTTP(S/2), Salesforce, Citrix, GWT, MQTT, SOAP, WebSocket, JMS, Oracle, RTMP, AMQP, Java



SAP Enterprise Performance Testing (EPT)

Native Integration

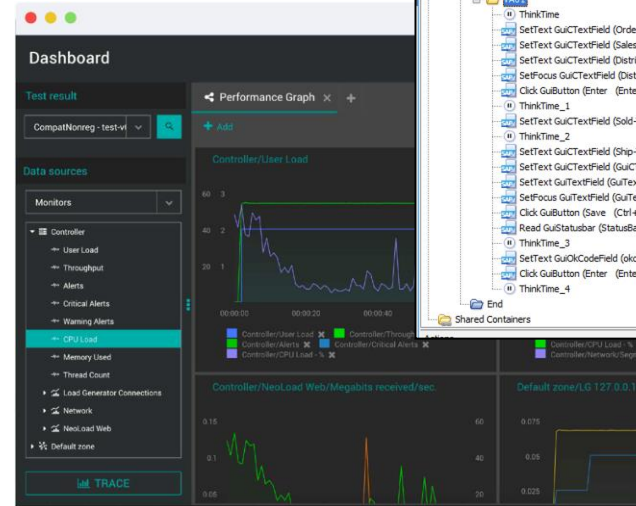
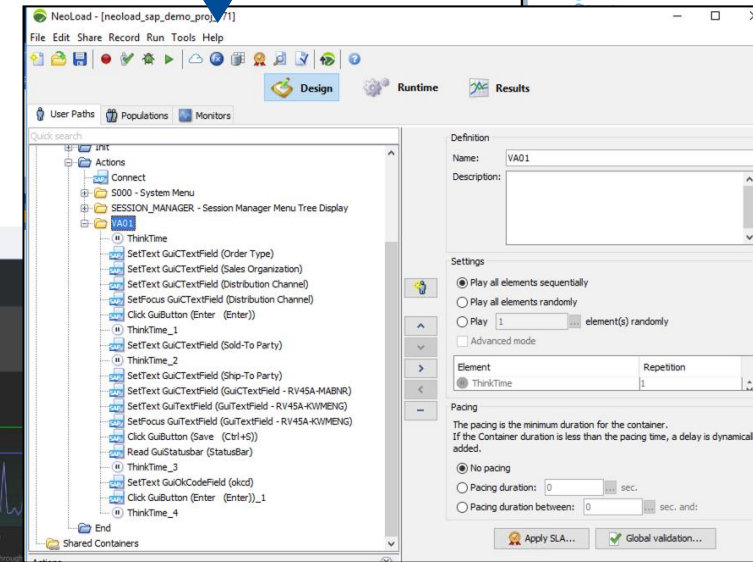
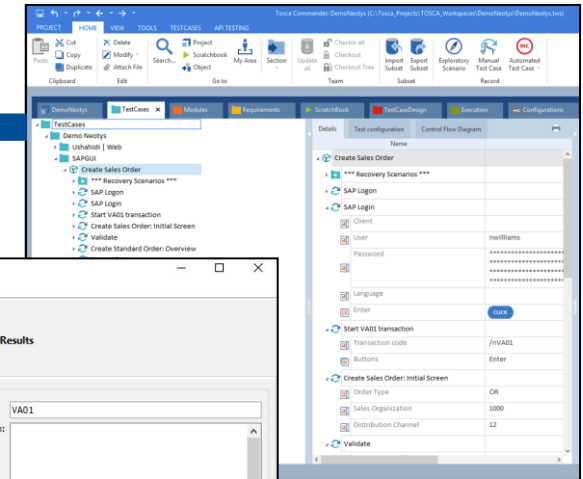
Native integration with other testing and DevOps tools contribute performance engineering metrics across all phases of release & delivery.

One click conversion of functional into performance tests. Convert SAP GUI, API, Web tests from ECT with one-click.

SAP EPT performance tests are **automatically updated** – enables Continuous Performance Testing

Up to **80% faster** test design & maintenance

One Test Definition



One Test Definition

ONE Test Definition

EPT & ECT Integration

One-click conversion to NeoLoad / EPT

The screenshot shows the Tosca Commander interface. The left sidebar displays a tree view of test cases under 'Demo Neotys' > 'SAPGUI' > 'Create Sales Order'. The main area shows the 'Test configuration' tab for the 'Create Sales Order' test case. It lists various steps and their configurations:

Name	Configuration
Client	
User	nwilliams
Password
Language	
Enter	CLICK
Start VA01 transaction	Transaction code: /nVA01
Buttons	Enter
Create Sales Order: Initial Screen	Order Type: OR
	Sales Organization: 1000
	Distribution Channel: 12
Validate	

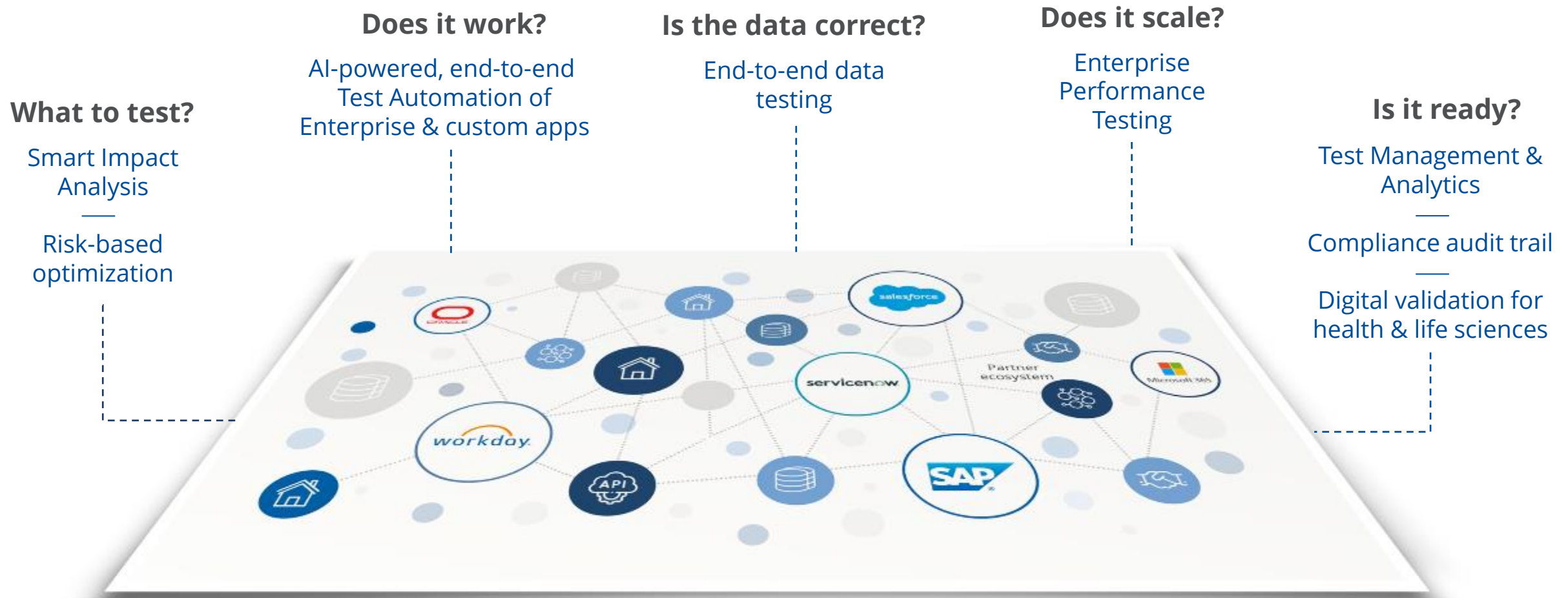
The screenshot shows the NeoLoad interface with the converted test case 'VA01'. The 'Actions' list includes:

- Init
- Connect
- S000 - System Menu
- SESSION_MANAGER - Session Manager Menu Tree Display
- VA01
 - ThinkTime
 - SetText GuiTextField (Order Type)
 - SetText GuiTextField (Sales Organization)
 - SetText GuiTextField (Distribution Channel)
 - SetFocus GuiTextField (Distribution Channel)
 - Click GuiButton (Enter (Enter))
 - ThinkTime_1
 - SetText GuiTextField (Sold-To Party)
 - ThinkTime_2
 - SetText GuiTextField (Ship-To Party)
 - SetText GuiTextField (GuiTextField - RV45A-MABNR)
 - SetText GuiTextField (GuiTextField - RV45A-KWMENG)
 - SetFocus GuiTextField (GuiTextField - RV45A-KWMENG)
 - Click GuiButton (Save (Ctrl+S))
 - Read GuiStatusbar (StatusBar)
 - ThinkTime_3
 - SetText GuiOkCodeField (okcd)
 - Click GuiButton (Enter (Enter))_1
 - ThinkTime_4
- End
- Shared Containers

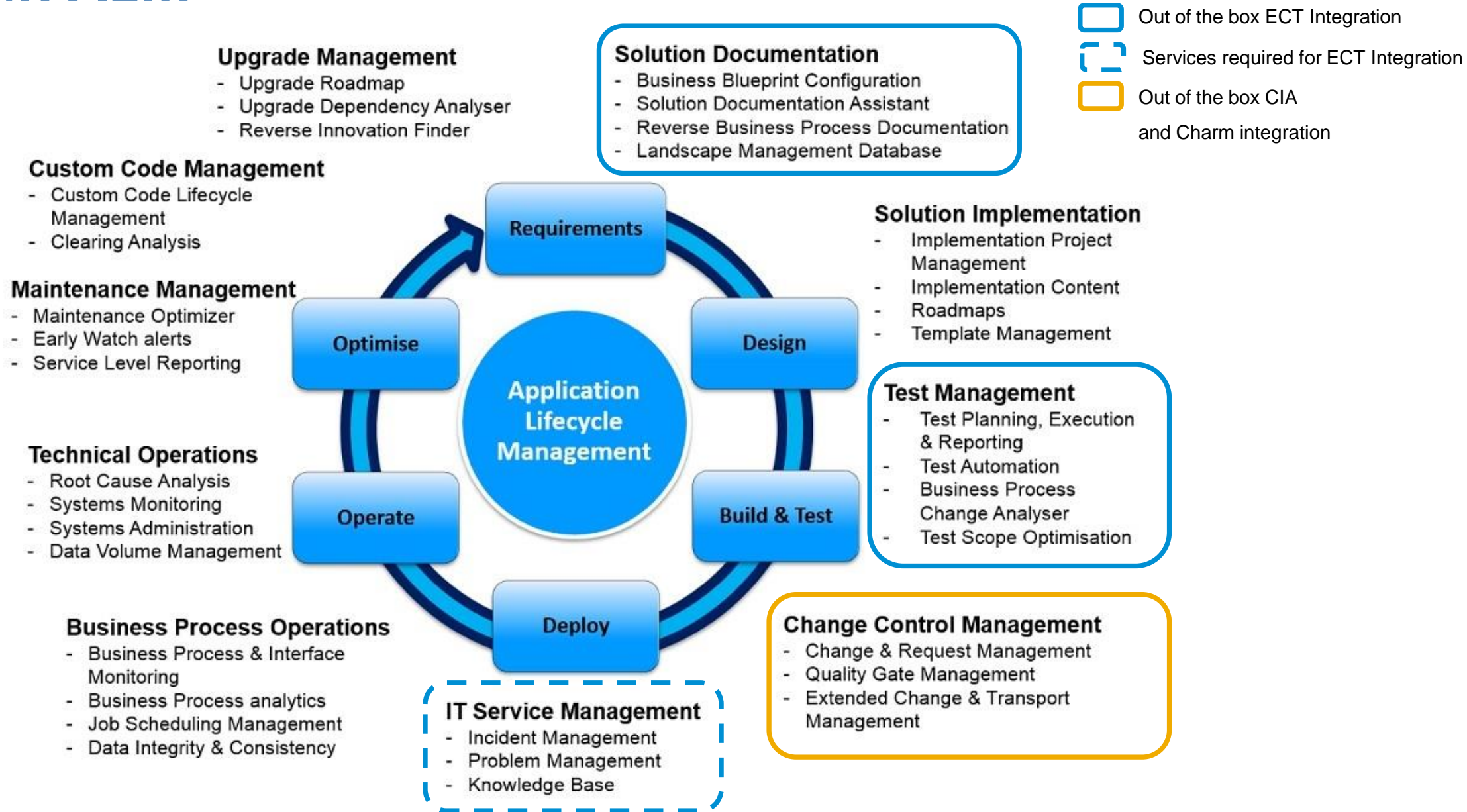
The right sidebar shows the 'Definition' and 'Settings' for the 'VA01' test case. The 'Settings' section includes options for 'Play all elements sequentially', 'Play all elements randomly', and 'Play 1 element(s) randomly'. The 'Pacing' section includes options for 'No pacing', 'Pacing duration: 0 sec.', and 'Pacing duration between: 0 sec. and:'. Buttons for 'Apply SLA...' and 'Global validation...' are visible at the bottom.

Deliver High-Quality Applications at Speed

All the Capabilities You Need










SolMan ALM



Deliver Quality at Speed

It's all here.

Tricentis Continuous Testing Platform
Supports 170+ enterprise applications and technologies

What to test ?	Does it work ?	Is the Data correct ?	Does it scale ?			
<p>Tricentis LiveCompare</p> <p>SAP Change Impact Analysis</p>	<p>Tricentis Tosca + Tricentis OSV</p> <p>SAP Enterprise Continuous Testing</p>	<p>Tricentis Data Integrity</p> <p>SAP Enterprise Data Integrity Testing</p>	<p>Tricentis NeoLoad</p> <p>SAP Enterprise Performance Testing</p>			
<p>SAP Solution Manager</p> <p>SAP ALM & Test Management</p>	<p>Tricentis qTest</p> <p>Agile Test Management</p>	<p>Tricentis SAP Transformation Toolkit</p> <p>Quality Maturity Assessment</p>				
 Fully automated	 AI powered	 Completely codeless	 Cloud enabled	 Risk optimized	 Enterprise DevOps	 Open and extensible

Forrester Total Economic Impact

SAP Application Testing Solutions

Through customer interviews and data aggregation, Forrester concluded that **SAP application testing solutions by Tricentis have the following three-year financial impact.**

Tricentis Business Assurance Quantified Benefits

Total Benefits:
\$7.8 million



When you put it all together, the benefits are clear: less test condition, less effort, less errors.

ERP principal test manager, telecommunications

BENEFITS

- Accelerate** innovation and software release cycles.
- Reduce** risks to critical business processes.
- Increase** transparency and support real-time insights.
- Lower** costs by reducing manual test efforts and complexity.
- Empower** business users and better decision-making.

334%

ROI and six months payback

300%

Improvement in application release rate

84%

Reduction in testing scope, and 78% reduction in production errors

99.4%

Reduction in performance test maintenance costs



Source: "The Total Economic Impact of SAP Application Testing Solutions by Tricentis," Forrester Consulting, 2021.

The Benefits of Business Assurance Transformation

Smart impact analysis



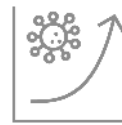
↓ 84%
testing effort

Intelligent test automation



↑ 90%
automation rate

Enterprise performance testing



↓ 95%
maintenance effort

End-to-end data testing



↓ 100%
cost avoidance

Unified test mgmt. & analytics



↑ 30%
project capacity

10x faster release cycles

40% cost reduction

90% risk coverage

Tricentis

The continuous testing market leader with Agile test management and advanced test automation optimized to support over 160+ technologies

Results



10X
Test Speed
Increase



40%
Lower
Costs



>90%
Risk
Coverage

Partners

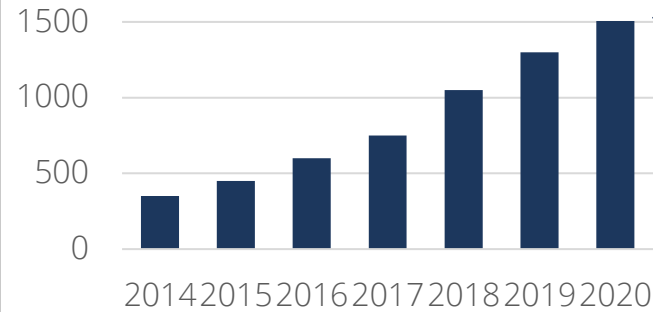


Tech Alliances



- 2021 **Neotys** Acquisition
Performance Testing
- 2020 **SAP Partnership**
Vision AI
- 2019 **LiveCompare** Acquisition
Impact Analysis
- 2018 **QASymphony** Merger
Test Management
- 2017 **Q-up** Acquisition
Test Data
- 2017 **Flood** Acquisition
Load Testing
- 2016 **Insight Venture Partners** Investment
- 2007 **Founded**

Customers



Greater than
2,500+
Customers
Worldwide

8 of the top **10** Global Banks

6 of the top **10** Financial Services

4 of the top **10** Energy | Utilities

8 of the top **10** Insurance Companies

8 of the top **10** Telcos

8 of the top **10** Global Services

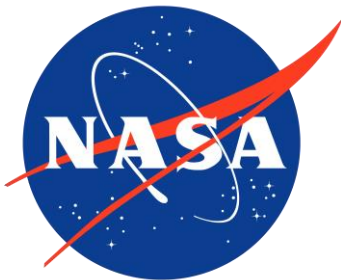
Analyst Recognition



Canadian Government Accounts



U.S. Federal Government



Thank You!

Rick Brown, Tricentis Account Manager

r.brown@tricentis.com

416-407-6975

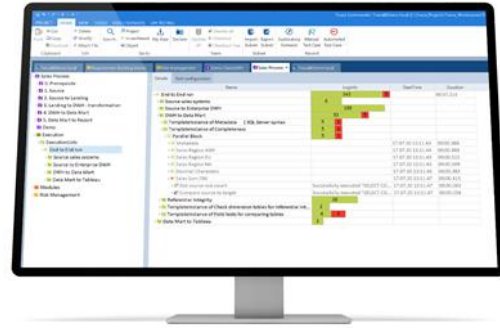
RISE with SAP: SAP Solution Extensions

by Tricentis



PREPARE

- SAP Change Impact Analysis
- Analyze the effects of software changes, updates, and upgrades across multiple complex, end-to-end SAP business processes.



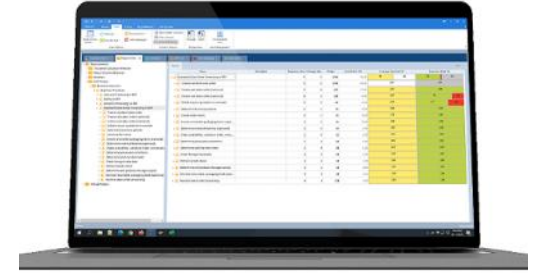
PREPARE

- SAP Enterprise Data Integrity Testing
- Automate data testing to maintain data integrity – wherever your data travels and whatever happens to it on its journey. Verify data accuracy with automated data testing.



MOVE

- SAP Enterprise Performance Testing
- Make cloud-based testing available, ensure applications perform under heavy user loads, and support digital transformation.



RUN

- SAP Enterprise Continuous Testing
- Enable digital transformation and intelligent operations by reducing business risk associated with application changes.

Available SAP Resources

- SAP Application Testing Solutions by Tricentis (Video)
<https://www.sap.com/canada/assetdetail/2021/12/a2690166-0e7e-0010-bca6-c68f7e60039b.html>
- Forrester Report
<https://www.tricentis.com/resources/forrester-total-economic-impact-sap-testing-solutions/>
- SAP Change Impact Analysis (What to test?)
<https://www.sap.com/canada/products/technology-platform/change-impact-analysis.html>
- SAP Enterprise Continuous Testing (Does it work?)
<https://www.sap.com/canada/products/technology-platform/enterprise-continuous-testing.html>
- SAP Enterprise Data Integrity Testing (Is the Data Correct?)
<https://www.sap.com/uk/products/technology-platform/enterprise-data-testing.html>
- SAP Enterprise Performance Testing (Does it Scale?)
<https://www.sap.com/canada/products/technology-platform/enterprise-performance-testing.html>